

Osprey



Quality

SECDEF Blue Ribbon Panel

11 January 2001

Ms Yvette Bose,
Assistant Deputy
for Product Development
PMA-275





V-22 Quality Outline



- Quality Program Background
- Recent Quality Reviews
- Summary



V-22 Quality Background



Key EMD Program Activities/Accomplishments:

- Quality members participated on IPTs, Systems Requirements Reviews, Preliminary Design Reviews, and Critical Design Reviews.
- Quality Assurance Program Plan Developed/Updated - applied to EMD and LRIP contracts.
- Manufacturing Process Verification Program Implemented for all in-house critical parts/processes.
- Production Readiness Reviews completed at the Primes and 13 critical vendors.
- QA Metrics demonstrated over 50% improvement in defects from ship #7 to #10 (EMD).



V-22 Quality Surveillance



On-going Quality management activities throughout EMD and LRIP:

- EMD: Weekly Manufacturing Videoconferences.
- EMD: Flight Readiness Reviews.
- Weekly Engineering IPT Videoconferences.
- Standing Bell-Boeing/Government corrective action teams.
- Risk Management system.
- DCMA/On-site PMA-Representatives.
- Monthly Amarillo Support Meetings.



V-22 Quality Background Improvement Examples



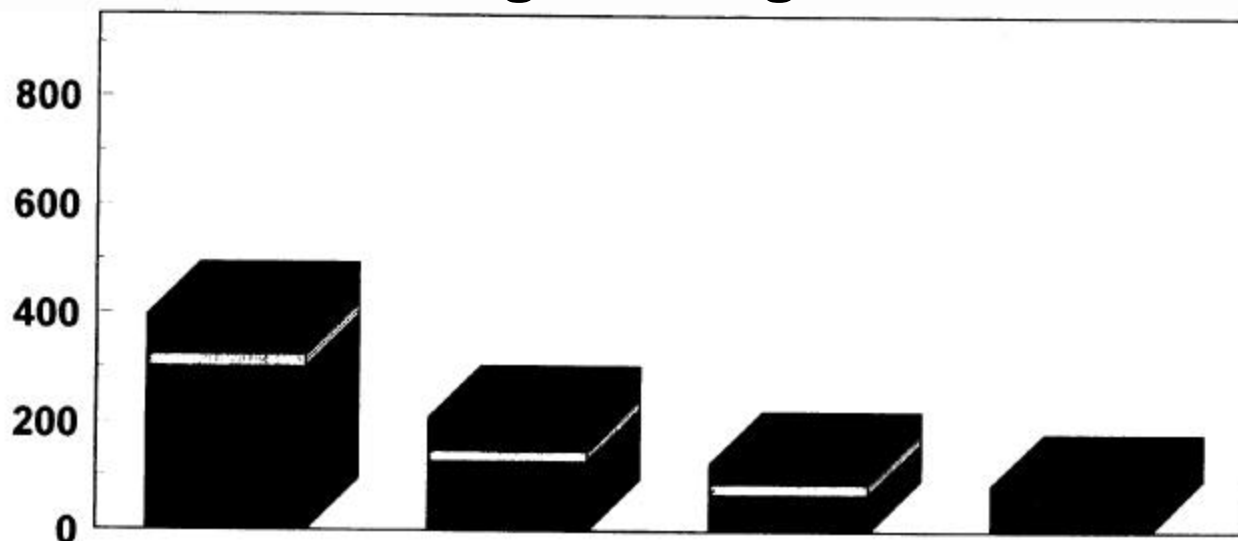
- Manufacturing VTC:
 - Sponson skin defect resolution.
 - Significant wing skin defects eliminated.
- Corrective Action Teams:
 - Numerous skin gap problems resolved.
 - Wire routing and clamping improvements.
- Risk Management System:
 - Abrasion strip fabrication problems resolved.
 - Grip fairing gaps and clearances improved.



Bell Only MDR Breakdown



Aircraft 09007 - 090010
After Wing/Fuselage Mate

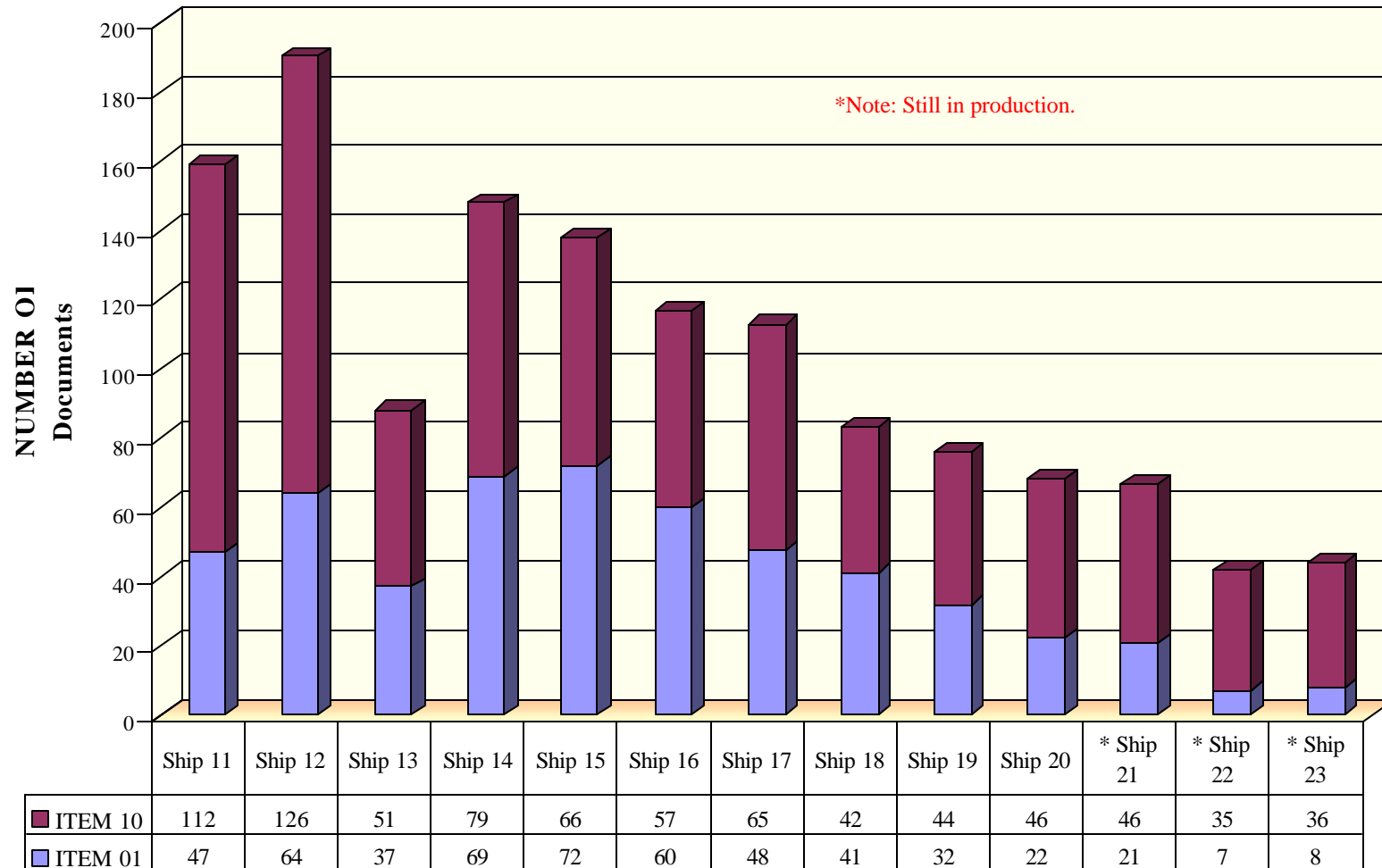


Aircraft	7	8	9	10
Other	300	127	66	55
LETAR	25	22	22	8
MELTAR	56	45	30	17
CATS	15	14	7	5
Total MDR's	396	208	125	85

Data does not include additional corrective actions taken by IPT's to correct tooling, Engineering, or planning problems; it displays only those items requiring MR action.



QMS Documents Per Ship





V-22 Quality



- V-22 QUALITY REVIEWS



V-22 Quality Review Background



- Efforts throughout EMD effectively improved aircraft quality. As the program transitioned into the production environment (LRIP) however, a significant number of defects were identified.
- At PMA-275's request, the Contractor led a Blue Ribbon review to assess their effectiveness in managing the V-22 Quality Program.
- PMA-275 conducted a follow-on Quality Review of Bell-Boeing and Selected Vendors from August - November 2000.
 - Utilizing ISO-9001 Elements as review guidelines, reviews were detailed, shop-floor level investigations that identified specific issues and needed improvements.



QA Review Findings



RCA # RISK ID	Issue Description	VERIFICATION/ FOLLOW-UP Current Status, Follow-up, Verification Method
4.9-3	No procedures available for extending the PSI on tooling. A ten year old flow chart was in place of procedures.	<p>Procedures risk group. Open - The SPI was verified. Verified the SPI 619C section D has the procedure for extending the PSI. Must verify the operators in Amarillo are aware of procedure.</p> <p>BELL RESPONSE: BHTI concurs with the recommendation and in fact had recommended specific systemic improvements during the January 2000 Quality Review to address this issue. Our on-going process certification activity verifies procedure adequacy as a part of the process and takes appropriate action when discrepancies are noted.</p> <p>- CORRECTIVE ACTION IMPLEMENTED</p>
4.9-4	Dept. 39 Inspection: Released Traveler D30708 for P/N 901-460-438-107 incorporated EO 901CB9347 and stamped by liaison engineering. Four travelers had been released but one was missing the change. (Time span?)	<p>DCMA verified the employees have been briefed and the QA internal audit team is monitoring it. CLOSED.</p> <p>BELL RESPONSE: BHTI concurs with the recommendation and in fact had recommended specific systemic improvements during the January 2000 Quality Review to address this issue. Our on-going process certification activity verifies procedure adequacy and compliance as a part of the process and takes appropriate action when discrepancies are noted.</p> <p>- CORRECTIVE ACTION IMPLEMENTED</p> <p>This finding was the result of an employee oversight in attaining the proper liaison change to 1 of 4 in-work travelers to accommodate the late delivery of a reworked tool. Processes and procedures are in-place to properly accomplish this type of activity. As a result of this occurrence the following corrective action has commenced:</p> <p>Departmental procedures will be reviewed for clarity and adequacy. Status: COMPLETE</p>



V-22 Quality Summary



- The Government's Quality Reviews have:
 - obtained Bell-Boeing Management attention to their need for improvement
 - surfaced continuing engineering and process issues
 - identified Contractor and DCMA Quality oversight issues.
- Bell-Boeing must focus on correcting the overarching processes to resolve systemic issues.
 - Top-level Risk Items were generated to facilitate that focus.
- Draft final report summarizing all reviews and findings in review.
- Review finding and systemic issues resolution will be tracked, verified and documented utilizing the V-22 Risk Management System.
- Metrics will be utilized to continuously monitor aircraft quality.